

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 14

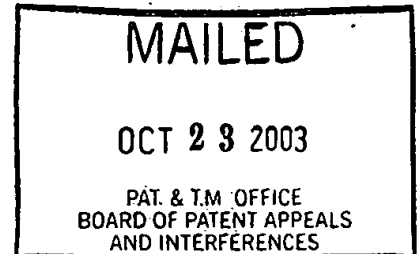
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte CETIN NMI KAYA

Appeal No. 2003-1564  
Application No. 09/620,649

ON BRIEF



Before OWENS, DELMENDO, and PAWLIKOWSKI, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 (2002) from the examiner's final rejection of claims 12 through 19 in the above-identified application. Claim 20, which is the only other pending claim, has been allowed.<sup>1</sup>

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<sup>1</sup> The preliminary amendment filed Jul. 21, 2000, which included instructions to amend the specification and to cancel claims 1-11, has not been clerically entered. Upon receipt of this application, the examiner should attend to the proper entry of the preliminary amendment.

The subject matter on appeal relates to an integrated circuit. Further details of this appealed subject matter are recited in representative claim 12 reproduced below:

12. An integrated circuit, comprising:  
a first dielectric layer disposed outwardly from a substrate;  
a plurality of gate stacks, each gate stack comprising:  
a floating gate body disposed outwardly from the first dielectric layer;  
a second dielectric region disposed outwardly from the floating gate body; and  
a first polysilicon layer disposed outwardly from the second dielectric region; and  
a plurality of dielectric isolation regions disposed between the gate stacks, the dielectric isolation regions disposed between the gate stacks, the dielectric isolation regions formed after the formation of the gate stacks.

The examiner relies on the following prior art references as evidence of unpatentability:

Woo et al. (Woo)	5,926,711	Jul. 20, 1999 (filed Dec. 23, 1997)
Van Buskirk et al. (Van Buskirk)	6,001,689	Dec. 14, 1999 (filed Jan. 16, 1998)
Chan et al. (Chan)	6,051,467	Apr. 18, 2000 (filed Apr. 02, 1998)

Claims 12, 13, 15, and 16 on appeal stand rejected under 35 U.S.C. § 102(e) as anticipated by Van Buskirk. (Examiner's answer mailed Jun. 24, 2002, paper 9, pages 3-4.) Additionally, claims 18 and 19 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Van Buskirk in view of Woo. (Id. at

page 4.) Further, claims 14 and 17 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Van Buskirk in view of Chan. (Id. at page 5.)

We affirm these rejections.<sup>2</sup> Because we are in complete agreement with the examiner's analyses and conclusions, we adopt them as our own and add the following comments primarily for emphasis.

The facts are not disputed. The subject application was filed on Jul. 20, 2000, claiming divisional application status under 35 U.S.C. § 121 (2002) based on prior non-provisional application 09/168,047, which was filed on Oct. 7, 1998 and subsequently issued to the appellant as U.S. Patent 6,194,267 on Feb. 27, 2001. Although the present specification was amended to recite benefit of priority under 35 U.S.C. § 119(e)(1) based on provisional application 60/060,561 filed on Sep. 30, 1997, copendency was never maintained throughout the chain of applications including the provisional application as required under 35 U.S.C. § 119(e)(1).<sup>3</sup> That is, the parent application,

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<sup>2</sup> The appellants state that the appealed claims stand or fall together and, in fact, rely on the same arguments for all the appealed claims. (Appeal brief filed Sep. 28, 2001, paper 8, pp. 3-5.) We therefore confine our discussion to claim 12. 37 CFR § 1.192(c)(7) (1995).

<sup>3</sup> The appellant alleges that provisional application 60/060,561 contains substantially the same disclosure as the

namely application 09/168,047, was filed seven days after the expiration of provisional application 60/060,561. The appellant admits as much. (Appeal brief, page 3.)<sup>4</sup>

Realizing that the subject application cannot claim benefit of an earlier filing date based on the provisional application, the appellant relies on a different theory. Specifically, it is the appellant's position that the requirements of 37 CFR § 1.131 have been met ipso facto such that Van Buskirk is not available as prior art under 35 U.S.C. § 102(e). We cannot agree.

37 CFR § 1.131 reads as follows:

(a) When any claim of an application or a patent under reexamination is rejected, the inventor of the subject matter of the rejected claim, the owner of the patent under reexamination, or the party qualified under §§ 1.42, 1.43, or 1.47, may submit an appropriate oath or declaration to establish invention of the subject matter of the rejected claim prior to the effective date of the reference or activity on which the rejection is based. The effective date of a U.S. patent, U.S. patent application publication, or international application publication under PCT Article 21(2) is the earlier of its publication date or date that it is effective as a reference under 35 U.S.C. 102(e). Prior invention may not be established under this section in any country other than the

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subject application. (Appeal brief, p. 3.) The examiner appears to concede this point.

<sup>4</sup> The following is a timeline summarizing the events in question:

Provisional appln. 9/30/1997	Van Buskirk effective date 1/16/1998	Expiration of Provisional 9/30/1998	Parent appln. 10/7/1998	Present appln. 7/20/2000
^	^	^	^	^

United States, a NAFTA country, or a WTO member country. Prior invention may not be established under this section before December 8, 1993, in a NAFTA country other than the United States, or before January 1, 1996, in a WTO member country other than a NAFTA country. Prior invention may not be established under this section if either:

(1) The rejection is based upon a U.S. patent or U.S. patent application publication of a pending or patented application to another or others which claims the same patentable invention as defined in § 1.601(n); or

(2) The rejection is based upon a statutory bar.

(b) The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application. Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence satisfactorily explained. [Underscoring added.]

Thus the rule provides that a declaration may be filed to antedate a reference. When filed, however, the declaration must be submitted by the inventor of the subject matter of the rejected claim, the owner of the patent under reexamination, or the party qualified under 37 CFR § 1.42, 1.43, or 1.47. In this case, the appellant does not rely on a declaration executed by the inventor or a party qualified under 37 CFR § 1.42, 1.43, or 1.47 as required under this rule. Instead, the appellant relies on a declaration, which was executed by his attorney, alleging what are believed to be the facts of the case. (Appeal brief,

page 4.) For this reason alone, the appellant has not effectively antedated any of the applied prior art references.

Even if we assume that the attorney's declaration satisfies the rule, which it does not, the appellant has not established "reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application." Here, the appellant has shown conception of the invention prior to the effective date of the reference (Jan. 16, 1998), as evidenced by the filing of the provisional application on Sep. 30, 1997. Nevertheless, proof of this conception must be coupled with proof of due diligence from prior to Jan. 16, 1998 to the filing of the parent application (Oct. 7, 1998). Again, however, the appellant does not identify any evidence establishing due diligence during the relevant time period, which is from just prior to Jan. 16, 1998 to Oct. 7, 1998. While the appellant argues (appeal brief, page 4; reply brief filed Jul. 22, 2002, paper 10, page 1) that diligence is necessarily established for the time period during which the provisional application was pending, no legal authority is cited for this proposition. In our view, the fact that the appellant missed the statutory deadline for claiming benefit of an earlier

filing date under 35 U.S.C. § 119(e)(1) based on the provisional application strongly suggests that due diligence was lacking during the time period from just prior to the effective date of reference to the filing of the parent application.

The appellant argues: "[T]he only break in the continuum was the seven day period [] between the end of one year subsequent to filing of the provisional application and the filing of the parent of this application." (Appeal brief, page 4.) But as pointed out by the examiner (answer, page 7-8), the rule requires that diligence must be shown for the time period from just prior to the effective date of the reference to the filing of the parent application. Moreover, the appellant has not identified a shred of evidence to establish diligence for the seven days from the expiration of the provisional application to the filing of the parent application. In re Mulder, 716 F.2d 1542, 1545, 219 USPQ 189, 193 (Fed. Cir. 1983) ("A liberal construction of the rule, which is clearly intended to benefit applicants, will permit applicants to show diligence from just prior to the date of the reference to their convention filing date, rather than all the way from their proven conception date, but liberality cannot be extended to the point of eliminating all proof of diligence, no matter how short [two days] the period to be covered.").

The appellant believes that the provisional application is effective to establish constructive reduction to practice. (Appeal brief, pages 4-5.) However, the examiner is correct (answer, page 6) that the provisional application is ineffective to establish constructive reduction to practice because it expired without a timely filing of a non-provisional application. Cf. In re Costello, 717 F.2d 1346, 1350, 219 USPQ 389, 391 (Fed. Cir. 1983) ("It has long been settled, and we continue to approve the rule, that an abandoned application, with which no subsequent application was copending, cannot be considered a constructive reduction to practice.").

For these reasons and those set forth in the answer, we affirm the examiner's rejections under: (i) 35 U.S.C. § 102(e) of appealed claims 12, 13, 15, and 16 as anticipated by Van Buskirk; (ii) 35 U.S.C. § 103(a) of appealed claims 18 and 19 as unpatentable over Van Buskirk in view of Woo; and (iii) 35 U.S.C. § 103(a) of appealed claims 14 and 17 as unpatentable over Van Buskirk in view of Chan.

The decision of the examiner is affirmed.



Appeal No. 2003-1564  
Application No. 09/620,649

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/620,649	07/20/2000	Cetin Nmi Kaya	TI-23686.I	4313

7590 06/24/2002

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EXAMINER

WILCZEWSKI, MARY A

ART UNIT PAPER NUMBER

2822

DATE MAILED: 06/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 9

Application Number: 09/620,649  
Filing Date: July 20, 2000  
Appellant(s): Cetin Kaya

**MAILED**  
JUN 24 2002  
**GROUP 2800**

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Jay M. Cantor  
For Appellant

**EXAMINER'S ANSWER**

This is in response to appellant's brief on appeal filed September 28, 2001.

Art Unit: 2822

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

Applicant's statement that there are no known related appeals and/or interferences is acknowledged.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

No amendment after final has been filed.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

Art Unit: 2822

**(7) *Grouping of Claims***

The Brief contains a statement that all the claims on appeal stand or fall together.

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

6,051,467	Chan et al.	4-2000
5,926,711	Woo et al.	7-1999
6,001,689	Van Buskirk et al.	12-1999

**(10) *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

Claims 12, 13, 15, and 16 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Van Buskirk et al., U. S. Patent 6,001,689.

Art Unit: 2822

Van Buskirk et al. disclose an integrated circuit comprising a floating gate memory array wherein the array comprises a plurality of gate stacks having a channel dielectric (61, 62, 63), a polysilicon floating gate (51, 52, 53), a dielectric region disposed outwardly from the floating gate (71, 72, 73), and a polysilicon gate electrode (41, 42, 43) and a plurality of dielectric isolation regions disposed between the gate stacks (26, 27, 28, and 29), see Fig. 2A and column 4, lines 1-10). The structure further comprises trenches and moats (Fig. 7A) formed between the stacks (column 5, lines 35-55). First oxide spacers (120-125) and oxide layer (101) are formed between the gate stacks and subsequently planarized to expose the polysilicon gate (41, 42, 43)(column 5, lines 35-65).

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Buskirk et al (U.S. Patent 6,001,689) in view of Woo et al. (U.S. Patent 5,926,711).

Van Buskirk et al. is applied as above. Van Buskirk et al. lacks anticipation only of using hemispherical grains of silicon as the floating gate. Woo et al. teach a floating gate transistor wherein the floating gate (24C) is formed of amorphous silicon which is converted to hemispherical grains of silicon (Fig. 3F and column 4, lines 35-55). It would have been obvious to one of ordinary skill in the art to use a floating gate having hemispherical grains of silicon in order to improve the capacitive coupling of the floating and control gates.

Art Unit: 2822

Claims 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Buskirk et al. (U.S. Patent 6,001,689) in view of Chan et al. (U.S. Patent 6,051,467).

Van Buskirk et al. is applied as above. Van Buskirk et al. lacks anticipation only of the thickness of the oxide layer in the ONO intergate dielectric. Chan et al. teach that a typical thickness for the oxide layer in an ONO intergate dielectric is between 50 and 100 angstroms (column 3, lines 40-50). It would have been obvious to one skilled in the art to use an oxide layer having a thickness of 50 to 100 angstroms in the known method of Van Buskirk et al. because it is well known to do so, as evidenced by Chan et al., and because this oxide layer thickness provides sufficient gate separation and capacitive coupling. Further, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed thicknesses because Applicant has not disclosed that the claimed thicknesses are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using thicknesses other than those claimed. Indeed, it has been held that optimization of range limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical.

Art Unit: 2822

**(11) Response to Argument**

Appellant has attempted to antedate the Van Buskirk Patent by arguing that a conception and reduction to practice with diligence from conception to the reduction to practice is present in this case. Appellant has alternately argued that the filing of his provisional application provided a constructive reduction to practice for a parent application to be subsequently filed or at least provided diligence after a conception with the filing of the parent of the subject application being either a constructive reduction to practice or a first constructive reduction to practice after conception with diligence (diligence being the filing and continued pendency of the provisional application. It has been well established that a previously abandoned application which was not pending with a subsequently filed application is evidence only of conception. An abandoned application with which no subsequent application was copending serves to abandon benefit of the application's filing as a constructive reduction to practice and the abandoned application is evidence only of conception. "While the filing of the original application theoretically constituted a constructive reduction to practice at the time, the subsequent abandonment of that application also resulted in an abandonment of the benefit of that filing as a constructive reduction to practice. The filing of the original application is, however, evidence of conception of the invention." *In re Costello* 219 USPQ 389, 392 (Fed. Cir. 1983). Hence, Appellant can only rely on the filing of the provisional application under 35 USC 119(e) as evidence of conception.

Art Unit: 2822

Reduction to practice may be an actual reduction or a constructive reduction to practice which occurs when a patent application on the claimed invention is filed. When conception occurs prior to the date of the reference, but reduction to practice is afterward, it is not enough merely to allege that Appellant had been diligent. *Ex parte Hunter* 1889 C.D. 218; 49 O.G. 733 (Comm'r Pat. 1889). Rather, Appellant must show evidence of facts establishing diligence. Under 37 C.F.R. 1.131, the critical period in which diligence must be shown begins just prior to the effective date of the reference and ends with the date of reduction to practice, either actual or constructive (i.e., the filing of a United States patent application). In this case, diligence must be shown for the period of time which begins just prior to the effective filing date of the Van Buskirk et al. Patent and ends on the filing date of Appellant's parent application, the filing of which constitutes a constructive reduction to practice. The entire period during which diligence is required must be accounted for by either affirmative acts or acceptable excuses. Appellant's statement that there was no lack of diligence and reliance on the decision in *Keizer v. Bradley* 123 USPQ 215, 216 (CCPA 1959) wherein it is stated that "'attorney-diligence' and engineering-diligence'...does not require that an 'inventor or his attorney...drop all other work and concentrate on the particular invention involved'" is not a showing but a mere pleading. Moreover, diligence must be shown from just prior to the effective filing date of the Van Buskirk et al. Patent (January 16, 1998) to Appellant's constructive reduction to practice, that is, the filing of parent application Serial

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No. 09/168,047 on October 7, 1998, and not only for the seven day period from the date of abandonment of Appellant's provisional application to the filing of the parent application.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,




M. Wilczewski

MW

December 6, 2001

Conferees

Olik Chaudhuri 

Carl Whitehead, Jr. 